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ABSTRACT

Federal efforts to establish financial support for health professions education in the 1960s and 1970s have led to an increase in the enrollment of minorities and women in health professions schools. The increase in the number of minority students graduating from these schools during the past decade has resulted in more minority practitioners among the total supply of active health care providers. However, statistical data on the numbers, distribution, and characteristics of minority health care providers, through which to measure accurately such changes or identify problems and progress, have not been available. This report provides estimates of minority enrollments in health professional schools and of 1980 levels of the supply of Black practitioners in medicine, dentistry, and pharmacy, and Hispanic practitioners in pharmacy. In addition, it provides an assessment of what the supply picture may be for these practitioners in the year 2000. These estimates were derived from the Bureau of Health Professions general forecasting data. The report also presents data on: (1) proportional representation of Black and Hispanic practitioners among the total supply of practitioners in the profession; and (2) ratios depicting the relationship between the supply of Black and Hispanic practitioners and the total population in these racial/ethnic groups. (AOS)

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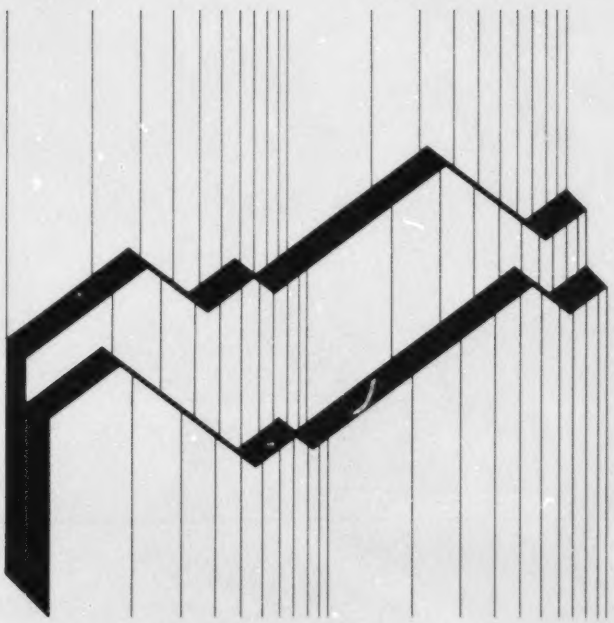
Estimates and Projections of Black and Hispanic Personnel in Selected Health Professions

1980-2000



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Preface

The enactment of Federal legislation establishing programs of financial support for health professions education (during the late 1960's and early 1970's) also provided a strong stimulus to the enrollment of minority persons and women in health professions schools. While progress has been made in expanding the numbers of minority persons enrolling in health professions schools, the gains have not been as dramatic as those for women.

Increases in the number of minority students graduating from health professions schools during the past decade have undoubtedly resulted in some increases in the number of minority practitioners among the total supply of active health care providers. Unfortunately, current statistics on the numbers, distribution, and characteristics of minority health care providers are not available through which to measure accurately such changes or through which to identify problems and progress.

As a result, the Office of Health Resources Opportunity (OHRO) of the Health Resources Administration (HRA) asked the Bureau of Health Professions' Division of Health Professions Analysis to examine available data on minorities in several of the major health professions, assess and analyze the changes that have occurred, and to forecast, under some clearly identifiable assumptions, what the future may hold for minority participation in the health professions. Their objective was to be able to identify more adequately progress and problems of minorities in gaining entry into the health professions. This report responds to that OHRO request. It is hoped, too, that it can also be used more generally as a source document for others interested in the status of minorities in the health field.

This report provides estimates of current (1980) levels of the supply of Black practitioners in medicine, dentistry, and pharmacy and Hispanic practitioners in pharmacy and an assessment of what the supply picture for these practitioners may be by the year 2000. These estimates were constructed by utilizing the Bureau of Health Professions general supply forecasting model. Because of severe data weaknesses and data gaps, the four groups listed above were the only minority health professionals for which estimates and projections could be made at this time.

To improve the usefulness of the estimates generated, the report also presents statistics relating the supply estimates and projections to other data for comparative purposes:

- proportional representation of Black and Hispanic practitioners among the total supply of practitioners in the profession.

- ratios depicting the relationship between the supply of Black and Hispanic practitioners and the total population in these racial/ethnic groups.

This report was prepared in the Division of Health Professions Analysis, Howard V. Stambler, Director, by Ernell Spratley under the direction of Stuart Bernstein, Chief, Supply and Utilization Forecasting Section and Leonard Drabek, Chief, Supply and Requirements Forecasting Branch. Elizabeth Aguino and Cathy Cox provided secretarial assistance.

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I. Summary and Overview

The number of active U.S.-trained Black physicians (M.D.'s and D.O.'s) is estimated at 11,700 in 1980, or 3.3 percent of the total supply of active U.S.-trained physicians. Black dentists and pharmacists are estimated to number 3,630 and 3,380, respectively, in 1980 comprising 2.9 and 2.3 percent of the total practitioners in these professions (table 1).

The racial/ethnic composition of the supply of health professionals is far different from that of the general population. Black physicians, dentists, and pharmacists comprised only 2-3 percent of the total supply of practitioners in these professions in 1980 while Black persons comprised 11.7 percent of the total U.S. population. In medicine, an additional 27,560 M.D.'s and 1,700 D.O.'s would have been needed in 1980 in order for Black physicians to reach parity in supply, that is to comprise a proportion of total practitioners equal to the representation of Black persons in the total population (table 2). Similarly, in dentistry and pharmacy, the number of additional Black practitioners necessary to achieve parity in 1980 would have been 11,140 and 13,490 respectively.

As table 1 illustrates, in 1980 there was 1 Black physician (M.D.'s and D.O.'s) for every 2,264 Black persons in the population, compared with 1 physician for every 647 persons in the general population. The disparity in these ratios for dentistry and pharmacy are similar, with 1 Black dentist for every 7,297 Black persons in the population and 1 Black pharmacist for every 7,838 persons, as compared with ratios for the general population of 1:1795 and 1:1571 for dentistry and pharmacy, respectively.

The situation for Hispanic pharmacists is similar to that for Black practitioners. Hispanic pharmacists, estimated to number 1,930 in 1980 currently comprise about 1 percent of the total supply of pharmacists, while persons of Spanish Origin comprise 6.4 percent of the population. In 1980 there was 1 Hispanic pharmacist for every 7,568 persons of Spanish Origin in the population compared with a national ratio of 1 pharmacist for every 1,571 persons in the population (table 1). The number of additional Hispanic pharmacists necessary to achieve parity in supply during 1980 would be 7,300.

The shortfall in the supply of these minority practitioners (relative to the supply level necessary for parity) exists despite the fact that the number of Black and other minority students entering the health professions schools have increased significantly since the early 1970's. In addition, narrowing of the gap between the existing supply and the supply necessary for parity has further been impeded for some minority groups by slowdowns in the increases in the number of new entrants to these schools since the mid-1970's. In fact, as a result of the slowdowns in the number of new entrants and the continuing increase in all first-year enrollments, the proportional representation of Black first-year entrants in schools of medicine and dentistry has actually declined slightly since the mid-1970's. While the proportional representation of Hispanics in the first-year classes of schools of dentistry has doubled since 1975, their representation in schools of pharmacy has changed little since that time. In schools of medicine, the proportion of first-year Mexican-American and Mainland Puerto Rican students has remained stable while the proportion of other Hispanic students has increased four-fold (tables 4-6).

Largely reflecting the 1970's increases in first-year enrollments, the number of Black and Hispanic practitioners in these professions is expected to increase substantially over the next 20 years, based on the assumptions presented later in this report (table 3). By the year 2000, the supply of Black U.S.-trained physicians is projected to range from 23,900 to 30,000. These levels are more than double the 1980 estimated supply of 11,700. Similarly, the supply of Black dentists in the year 2000 is projected to range from 6,300 to 7,350, increasing at least 74 percent over the next 20 years. Black pharmacists are projected to number 7,120 to 8,480 in 2000, or more than double the 1980 estimate of 3,380. The supply of Hispanic pharmacists is also expected to more than double by 2000, to a projected supply of 3,450 to 4,360, as compared with 1,930 in 1980.

Despite the projected large increases in the number of such minority practitioners, the concurrent increases in the total supply of practitioners in these professions means that the proportion that Blacks and Hispanics represent of the total will increase much less than their numbers during the next 2 decades. Black physicians are expected to increase from 3.3 percent of the total U.S.-trained physician supply in 1980 to no more than 5 percent in 2000. The proportional representation of Black dentists is expected to increase from the current 2.9 percent to about 4 percent in 2000. Expected changes for pharmacists are similar, with Black pharmacists increasing from 2.3 percent of the total supply to about 4 percent in 2000, and Hispanic pharmacists increasing from 1.3 percent of total supply in 1980 to about 2 percent in 2000.

For all three professions, therefore, it is clear that minority practitioners are not likely to achieve representation among the total supply of practitioners equal to their proportion of the total population without substantial increases in minority enrollments in the health professions schools. Under the high series presented here, the number of Black persons per Black physician in the year 2000 is expected to be more than double the national average (table 1). Similarly, the ratios for Black persons per Black dentist and Black pharmacists are expected to be triple the national average. The shortfalls in the number of practitioners necessary to achieve parity in 2000 (even in a situation where the lowest series of total supply estimates is realized along with the highest series of Black supply estimates) is 37,200 for Black M.D.'s, 3,500 for Black D.O.'s, 15,600 for Black Dentists and 14,300 for Black Pharmacists (table 2). The low series of total supply estimates is coupled with the high series of Black supply estimates in table 2 to illustrate the lowest estimate of additional practitioners necessary to achieve parity in supply. Of course, if the "most likely" series of total supply projections (or a lower supply of Black practitioners) is realized in 2000, the shortfall would be even greater.

Shortfalls are also apparent when parity is viewed from the perspective of achieving Black and other minority representation among first-year enrollees in health professions schools equal to the representation of these groups in the general population. For example, Blacks comprised 11.7 percent of the total population in 1980. In order to account for this same percentage of total new entrants to medical schools, Black new entrants would have to number 2011 or nearly 900 students more than the actual number Black first-year enrollees in that year. Similarly, Black dental first-year and phrmacy

third-to-last-year enrollees would have to number 698 and 925, respectively, in order to parallel the representation of Blacks in the general population.

Under the most "optimistic" assumptions presented here regarding the numbers of black students enrolling in the first-year classes from 1981-96, the number is expected to be no more than 62 percent of the level required to result in parity in first enrollment in medical schools. In schools of dentistry and pharmacy Black first-year enrollments are projected to reach, at most, about 50 percent of the level required for parity even if the lowest series of total enrollments are realized.

Table 1. Estimated and Projected Active Supply of Total, Black, and Hispanic Practitioners for Selected Health Professions, and Practitioner to Population Ratios, 1980 and 2000

	Estimated Total (1980)	Estimated Black (1980)	Estimated Hispanic (1980)	Ratio Total Practitioners to Total Population (1980)	Ratio of Black Practitioners to Black Population (1980)	Ratio of Hispanic Practitioners to Hispanic Population (1980)	Projected Total Lowest Estimate (2000)	Ratio Total Practitioners to Total Population (2000)	Projected Black Highest Estimate (2000)	Ratio Black Practitioners to Black Population (2000)
Medicine (U.S.-Trained M.D.'s)	333,000	11,400	N/A	1:680	1:2324	N/A	522,900	1:498	28,700	1:1144
Osteopathy	17,100	300	N/A	1:13246	1:88294	N/A	38,000	1:6852	1,300	1:25260
Total U.S.-Trained Physicians (M.D.'s and D.O.'s)	350,100	11,700	N/A	1:647	1:2264	N/A	560,900	1:434	30,000	1:1095
Dentistry	126,200	3,630	N/A	1:1795	1:7297	N/A	181,800	1:1432	7,350	1:4468
Pharmacy	144,200	3,380	1,930	1:1571	1:7838	1:7568	180,200	1:1445	8,440	1:3891

Sources: Estimated and Projected Total, Black and Hispanic Practitioners 1980 and 2000, BHPr General Supply Model.

1980 Population - U.S. Bureau of Census. 1980 Census of Population. Supplementary Reports. Age, sex, race and Spanish Origin of the Population by Regions, Divisions, and States, 1980. P.C. 80-S1-1. 2000 - U.S. Bureau of Census. Current Population Reports, Series P-25, No. 704 Series II.

Table 2. Estimated and Projected Active Supply of Total and Black Practitioners for Selected Health Professions and Representation of Blacks Among the Total 1980 and 2000

	Estimated Total (1980)	Estimated Black Percent of Total (1980)	Number and Percent Necessary to Reach Parity (1980)	Additional Numbers Necessary to Reach 1980 Parity	Projected Total Lowest Series (2000)	Projected Black Highest Series and Percent of Total (2000)	Number and Percent Necessary to Reach Parity (2000)	Additional Numbers Necessary to Reach 2000 Parity
Medicine (U.S.-Trained M.D.'s)	333,000	3.4%	38,960/11.7%	27,560	522,900	28,700/5.5%	65,890/12.6%	37,190
Osteopathy	17,100	1.8%	2,000/11.7%	1,700	38,000	1,300/3.4%	4,790/12.6%	3,490
Dentistry	126,200	2.9%	14,770/11.7%	11,140	181,900	7,350/4.0%	22,900/12.6%	15,550
Pharmacy	144,200	2.3%	16,870/11.7%	13,490	180,200	8,480/4.7%	22,700/12.6%	14,220

Sources: Estimated and Projected Total and Black Practitioners, 1980 and 2000, BHPr General Supply Model

1980 Population - U.S. Bureau of Census. 1980 Census of Population. Supplementary Reports. Age, sex, race and Spanish Origin of the Population by Regions, Divisions, and States, 1980. P.C. 80-S1-1. 2000 Population - U.S. Bureau of Census. Current Population Reports, Series P-25, No. 704 Series II.

Table 3. Projections of the Active Supply of Black Personnel in Selected Health Professions, 1985-2000

	1985	1990	1995	2000
		Series I[1/]		
Total U.S. Trained Physicians (M.D.'s and D.O.'s)	15,300	18,400	21,200	23,900
Medicine (U.S. Trained M.D.'s)	14,900	17,800	20,500	23,100
Osteopathy	400	600	700	800
Dentistry	4,530	5,270	5,800	6,300
Pharmacy	4,620	5,600	6,380	7,120
		Series II[1/]		
Total U.S. Trained Physicians (M.D.'s and D.O.'s)	15,500	19,200	22,700	26,100
Medicine (U.S. Trained M.D.'s)	15,100	18,600	21,900	25,100
Osteopathy	400	600	800	1,000
Dentistry	4,550	5,400	6,160	6,860
Pharmacy	4,680	5,930	7,140	8,290
		Series III[1/]		
Total U.S. Trained Physicians (M.D.'s and D.O.'s)	15,800	20,300	25,200	30,000
Medicine (U.S. Trained M.D.'s)	15,400	19,600	24,200	28,700
Osteopathy	400	700	1,000	1,300
Dentistry	4,580	5,540	6,470	7,350
Pharmacy	4,680	5,980	7,260	8,480

1/ See the respective profession sections for discussions of assumptions underlying these projections.

Table 4. First-Year Enrollment in Schools of Medicine in the United States by Racial/Ethnic Category: Academic Years 1970-71 through 1980-81

Academic Year	Total First-Year Enrollment[1]	First-Year Minority Enrollment	Racial/Ethnic Category						
			Black	Mexican-American	Mainland Puerto Rican	Other Hispanic	American Indian	Asian	Other Minority
			Number of Students						
1970-71	11,343	998	697	73	27	[2]	11	190	[2]
1971-72	12,361	1,280	882	118	40	[2]	23	217	[2]
1972-73	13,677	1,437	957	137	44	[2]	34	231	34
1973-74	14,159	1,631	1,027	174	56	[2]	44	259	71
1974-75	14,763	1,839	1,106	227	69	[2]	71	275	91
1975-76	15,295	1,787	1,036	224	71	41	60	282	73
1976-77	15,613	1,891	1,040	245	72	62	43	343	81
1977-78	16,136	2,002	1,085	246	68	157	51	395	[2]
1978-79	16,501	2,046	1,061	260	75	151	47	452	[2]
1979-80	16,930	2,237	1,108	290	86	188	63	502	[2]
1980-81	17,186	2,585	1,128	258	95	224	67	572	[2]
			Percent of Total						
1970-71	100.0	8.8	6.1	0.6	0.2	[2]	0.1	1.7	[2]
1971-72	100.0	10.4	7.1	1.0	0.3	[2]	0.2	1.8	[2]
1972-73	100.0	10.5	7.0	1.0	0.3	[2]	0.2	1.7	0.2
1973-74	100.0	11.5	7.3	1.2	0.4	[2]	0.3	1.8	0.5
1974-75	100.0	12.5	7.5	1.5	0.5	[2]	0.5	1.9	0.6
1975-76	100.0	11.7	6.8	1.5	0.5	0.3	0.4	1.8	0.5
1976-77	100.0	12.1	6.7	1.6	0.5	0.4	0.3	2.2	0.5
1977-78	100.0	12.4	6.7	1.5	0.4	1.0	0.3	2.4	[2]
1978-79	100.0	12.4	6.4	1.6	0.5	0.9	0.3	2.7	[2]
1979-80	100.0	13.2	6.5	1.7	0.5	1.1	0.4	3.0	[2]
1980-81	100.0	15.0	6.6	1.5	0.6	1.3	0.4	3.3	[2]

[1] Residents of the Commonwealth of Puerto Rico are included in the total first-year enrollment figures but are not shown separately.

[2] The categories "Other Hispanic" and "Other Minority" were not in use in these years.

Source: "Datagram: 1979-80 Enrollment in U.S. Medical Schools," Journal of Medical Education, 55:1042 -1044, December 1980. Also prior Datagrams.

1980-81 compiled from data from the American Association of Medical Colleges.

Table 5. First-Year Enrollment in Schools of Dentistry in the United States by Racial/Ethnic Category: Academic Years 1971-72 through 1980-81 1/

Academic Year	Total First-Year Enrollment	First-Year Minority Enrollment	Racial/Ethnic Category				
			Black	Hispanic American	American Indian	Asian	Other Minority
			Number of Students				
1971-72	4,705	412	245	40	4	112	11
1972-73	5,287	475	266	56	5	138	10
1973-74	5,389	529	273	69	12	141	34
1974-75	5,555	551	279	75	12	142	43
1975-76	5,697	637	298	75	22	186	56
1976-77	5,869	650	291	96	21	174	68
1977-78	5,890	641	296	110	10	225	2/
1978-79	6,235	681	280	122	16	263	2/
1979-80	6,066	745	274	163	19	289	2/
1980-81	5,964	772	283	160	12	317	2/
			Percent of Total				
1971-72	100.0	8.8	5.2	0.9	0.1	2.4	0.2
1972-73	100.0	9.0	5.0	1.1	0.1	2.6	0.2
1973-74	100.0	9.8	5.1	1.3	0.2	2.6	0.6
1974-75	100.0	9.9	5.0	1.4	0.2	2.6	0.8
1975-76	100.0	11.2	5.2	1.3	0.4	3.3	1.0
1976-77	100.0	11.1	4.9	1.6	0.3	3.0	1.1
1977-78	100.0	10.9	5.0	1.9	0.2	3.8	2/
1978-79	100.0	10.9	4.5	2.0	0.3	4.2	2/
1979-80	100.0	12.3	4.5	2.7	0.3	4.8	2/
1980-81	100.0	12.9	4.7	2.7	0.2	5.3	2/

1/ Excludes students at the University of Puerto Rico.

2/ The category of "Other Minority" was eliminated from first-year student data for 1977-78 and subsequent years.

Source: American Dental Association, Council on Dental Education. Minority Student Enrollment and Opportunities in U.S. Dental Schools, for 1971-72 and for 1972-73. Minority Report; Supplement of Annual Report on Dental Education 1973-74, and reports for subsequent academic years.

Table 6. Third-to-Last Year Enrollment in Schools of Pharmacy in the United States by Racial/Ethnic Category: Academic Years 1973-74 through 1979-80

Academic Year	Total Third-Last Year Enrollment[1/]	Racial/Ethnic Category					
		Third-Last Year Minority Enrollment	Black	Hispanic	American Indian	Asian	Other Minority
					Number of Students		
1973-74	8,143	669	266	127	10	246	20
1974-75	8,522	696	330	105	10	237	14
1975-76	8,494	852	413	164	14	230	31
1976-77	7,990	752	356	135	12	242	7
1977-78	8,235	819	386	129	16	268	20
1978-79	8,127	852	351	156	11	309	15
1979-80	7,905	969	387	162	18	367	35
					Percent of Total		
1973-74	100.0	8.2	3.3	1.6	0.1	3.0	0.2
1974-75	100.0	8.2	3.9	1.2	0.1	2.8	0.2
1975-76	100.0	10.0	4.9	1.9	0.2	2.7	0.4
1976-77	100.0	9.4	4.5	1.7	0.2	3.0	0.1
1977-78	100.0	9.9	4.7	1.6	0.2	3.3	0.2
1978-79	100.0	10.5	4.3	1.9	0.1	3.8	0.2
1979-80	100.0	12.3	4.9	2.0	0.2	4.6	0.4

Note: Excludes students at the University of Puerto Rico.

1/ These students comprise those in the first year of the three years of professional pharmacy education, excluding any students in pre-pharmacy years.

Source: American Association of Colleges of Pharmacy. "Enrollment Report on Professional Degree Programs in Pharmacy, Fall 1979" in American Journal of Pharmaceutical Education, 44:177-192, May 1980. Also prior annual reports.

II. Methodological Overview

The estimates of the current (1980) and projected (2000) active supply of Black (and where applicable, Hispanic) practitioners in medicine, dentistry, and pharmacy were developed by the Division of Health Professions Analysis utilizing the Bureau of Health Professions (BHPr) general supply model. The estimates and projections of the supply of minorities were derived in a roughly similar manner, with both based on 1) the most recently available detailed information on the numbers and characteristics of practitioners in the profession, 2) adding the known and estimated graduates to the base year; and 3) subtracting the losses to the profession due to deaths and retirements.

Age-specific graduate additions to the active supply of total and minority practitioners were based on the latest actual data available, largely from professional associations, and on expected future levels of first-year enrollments in health professions schools. Where first-year enrollments rather than actual graduate figures were used, attrition rates were applied to yield annual estimates of graduates from each class. These graduates were then added to the supply in the year that they were expected to complete the program. Generally, the most recent attrition experience for schools within a discipline was adopted and this rate was maintained for the length of the projection period. Where estimates were thought to be questionable, a range of estimates of student attrition was used.

Estimates of annual losses to the workforce were computed by applying age-specific death and retirement rates to the active supply in each year. Since actual data on the supply of Black and Hispanic practitioners in the health professions are not available, estimates of Black physicians and dentists in 1980 had to be developed by updating data from the 1970 Census of Population, which currently provides the only data available on the age distribution of Black and Spanish Origin physicians and dentists. Current estimates of the supply of Black and Hispanic pharmacists were developed from data from a 1974 survey of pharmacists.

For each of the 3 health professions included in this report, projections of the supply of active minority practitioners in the year 2000 were developed on the basis of the most recent data available on first-year enrollments and graduate additions, and on assumptions as to future enrollment levels in the respective health professions schools. For all the professions included, three series of supply projections are given, reflecting variations in the assumptions regarding future levels of Black and (in the case of pharmacy) Hispanic enrollments in schools and variations in attrition rates for these groups.

The assumptions and computations used for deriving the base year age specific supply, student attrition, and death and retirement rates for each profession are discussed in the section which follows. First-year enrollments are discussed in a later, separate section, allowing for more detailed discussion of past enrollment trends and factors which are thought to influence future levels.

Development of Age-Specific Base Year Supply-Base year supply estimates only for Black physicians and dentists were developed from data collected in the 1970 Census. Although the Census reported the number of physicians and dentists of Spanish-origin, their figures include an unknown number of persons who were also classified as Black. Thus, the number of Hispanic practitioners derived from these data are distorted by the double-counting of practitioners classified as Black and, therefore, precluded the calculation of reliable estimates on Hispanic physicians and dentists. No other data were available on which to base estimates for other minorities in these professions.

Estimates of the 1970 supply of Black physicians and dentists used in deriving the 1980 estimates and projections presented here were derived by applying the percentage that Black physicians and dentists comprised of total practitioners in the 1970 Census to a DHPA estimate of total active physicians and dentists in 1970. The age distributions for Black physicians and dentists from the 1970 Census were then applied to the revised totals in order to derive frequency distributions of these practitioners by age. The age-sex-specific supplies of Black and Hispanic pharmacists were derived from the BHPr 1974 survey of pharmacists.

Separation Rates-Separation rates (death and retirement rates) specific to Black or Hispanic practitioners are not available for any of the health professions, so rates for total practitioners were used to develop the 1980 supply estimates and to project the supply to 2000.

Age-specific death and retirement rates for Black physicians (M.D.'s and D.O.'s) were assumed to be the same as those for all male physicians. These rates were derived from AMA data on the death and retirement patterns of M.D.'s.[1/] Black dentists were assumed to exhibit the same age-specific death and activity patterns as total dentists. These mortality rates follow the pattern of White males in 1976 as derived from the 1976 edition of Vital Statistics of the United States, with activity rates by age reflecting the latest data available from the American Dental Association for total dentists.

Black and Hispanic pharmacists were separated from the workforce according to the age-sex specific death and retirement rates assumed to prevail for all pharmacists. These death rates are those for the White population (by sex) in 1976 as derived from the 1976 edition of Vital Statistics of the United States. Retirement rates are based on tables of working life prepared by the Bureau of Labor Statistics, adjusted to reflect activity patterns specific to pharmacists.

Student Attrition-Data on the retention of minority students in medical school indicate that 86-87 percent of Black students in the entering classes during the years 1968-73 were still in medical school three years after

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1/ Death rates are from Goodman, L.J., "The Longevity and Mortality of American Physicians, 1969-73," Milbank Memorial Fund Quarterly, Summer 1975: 353-375. Retirement rates were prepared under contract for the Division of Health Professions Analysis by Mark Battle Associates using data from the American Medical Association for the years 1967 and 1974.

admission.[2,3/] Assuming that their attrition rate in the fourth year was the same as for all students (0.4 percent), an overall average attrition rate of 14 percent was assumed for Black M.D. and D.O. first-year enrollees for the lowest series of projections. For the high series, it was assumed that the attrition rate for Black students entering in more recent years and in the future would be more similar to those for all students, so a rate of 5 percent attrition was assumed. The mid-point between these estimates of attrition (9.5 percent) was used in the intermediate series of projections.

The estimated attrition rate for Black dental students has recently ranged from 12 to 15 percent.[4/] Therefore, in the three series of projections for Black dentists presented here, student attrition rates of 12, 15 and a midpoint of 13.5 percent are assumed. No data on differential attrition for pharmacy students according to race or ethnicity are available. Accordingly, the rates of 18 percent for males and 14 percent for females assumed for all pharmacy students were used for Black and Hispanic pharmacy students. These rates for all professions are held constant thru the year 2000.

2/ Association of American Medical Colleges, Report on the Association of American Medical Colleges Task Force on Minority Student Opportunities in Medicine, June 1978.

3/ Johnson, D.G. and Sedlacek, "Retention by Sex and Race of 1968-72 U.S. Medical School Entrants," Journal of Medical Education, 50:932, 1975.

4/ American Dental Association, Council on Dental Education, presented April 30, 1980 at Health Resources Administration Seminar Series in Evaluation "Minority Enrollment in Dental Schools."

Caveats and Limitations of Supply Estimates and Projections

Although the data and methodology used to develop the estimates and projections for minorities are believed to provide reasonable estimates of current and future supply, a number of limitations and caveats concerning the data and methodology should be kept in mind when attempting to utilize, analyze or interpret these numbers. The overriding problem is simply the lack of current, consistent and reliable data, particularly timely and accurate data on the number and characteristics of Black and other minority practitioners in the health professions. A number of assumptions and data manipulations were therefore necessary to develop the base year estimates presented, even before projections could be made. The previously described methodology for developing the age-specific bases from data for the 1970's illustrates the imprecision of many of the estimates and projections, and of the background figures on which they may be based.

Separations from the workforce for minority practitioners are estimated on the basis of the patterns exhibited by all practitioners, which obviously largely reflect the characteristics of non-minority health professionals. The precision of current supply estimates and projections of the future supply of minority practitioners is further affected by the extent to which these patterns for minority practitioners differ from those of all practitioners. The extent of this difference, if one indeed exists, is unknown.

Given the many difficulties involved in forecasting overall first-year enrollments, the uncertainties involved in forecasting future first-year enrollments for minorities are obvious. It is clearly impossible to predict the levels of minority first year enrollments over the next 16 years. Thus, in order to provide alternative estimates of future supply levels, three different series of estimates, covering a range of possibilities, have been provided. It is believed that the projections, when interpreted in a careful manner, can be of significant value as "what if" estimates.

III. Trends and Projections of Minority Enrollments

The major differences in the three levels of projections of the supply of Black and Hispanic health professionals presented here result from differences in assumptions regarding the future numbers of minority persons matriculating in the health professions schools. This section provides a brief discussion of the considerations included in formulating the assumptions regarding future first year enrollments of Blacks and Hispanics for the three health professions presented.

Trends in First-Year Enrollments

As tables 4-6 show, the number of Black and other minority students entering the health professions schools are significantly greater than they were in the early 1970's. However, for some groups (notably Blacks) increases in first-year enrollees have slowed down considerably since the mid-1970's. In medicine and dentistry, the proportional representation of Black first-year entrants has actually declined since the mid-1970's.

A number of reasons have been offered for the levelling off of increases in minority enrollments even in the face of continued increases in overall first-year enrollments. These include the increasing costs of obtaining a health professions education, high interest rates for loans, reduced financial aid, a lessening of financial support of schools by the Federal Government,

and in the case of medicine, a slowdown of the momentum of affirmative action as a result of legal challanges to affirmative action programs (as in the Bakke case).[5,6/]

In addition, it has been suggested that the dual goals of equity in opportunity for education in the health professions for minorities and women may have been viewed as a single goal by some institutions, that now feel that the phenomenal increase in the representation of women in these institutions has largely satisfied their commitment to increase the representation of minorities and women. The data shown in table 7 indicate clearly the degree to which the success of females in entering health professions schools has outpaced that of minorities.

As table 7 shows, since 1975-76, the representation of females in the entering classes increased 5.1 percentage points for schools of medicine (from 23.8 to 28.9 percent) 7.5 percentage points for schools of dentistry (from 12.1 percent to 19.6 percent) and for schools of pharmacy 10.0 percentage points (from 34.7 to 44.7 percent). In contrast, the representation of Blacks and Hispanics in the entering classes of schools of medicine and pharmacy was virtually the same in 1980-81 as in 1975-76. In schools of dentistry, Black representation in the first-year classes has actually declined slightly, from

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5/ Strelnick, H. and Younge, R., Double Indemnity: The Poverty and Mythology of Affirmative Action in Health Professional Schools, Health Policy Advisory Center, June, 1980.

6/ Barber, J.B., "President's Inaugural Address, Health Status of the Black Community," Journal of the National Medical Association, 71:87-90, 1979.

5.2 percent in 1975-76 to 4.7 percent in 1980-81, although Hispanic representation increased from 1.3 to 2.7 percent.

It is also worth noting that the substantial representation of females in these schools does not include a very large Black and Hispanic female component, although their proportion has increased along with that of all women. The representation of females in the entering classes of medical schools increased from 23.8 to 28.9 percent from 1975-76 to 1980-81, the representation of Black females increased from 2.5 to 3.0 percent, and Hispanic women from 0.5 to 0.7 percent. On the other hand, in schools of dentistry, there was no increase in Black female representation. Total female representation in first-year dental school classes increased from 12.1 percent in 1975-76 to 19.6 percent in 1980-81; while the proportion of Black females was the same in 1980-81 as in 1975-76 (1.7 percent). Hispanic females, however, did increase their representation, although from only 0.3 to 0.6 percent of total first-year enrollments. In schools of pharmacy, where females increased from 34.7 to 44.7 percent of total entrants in the first-year of professional pharmacy education, Black females increased far less, rising only from 2.5 to 2.7 percent of the total and Hispanic females increased from 0.5 to 0.8 percent.

Future demographic and educational trends and FYE levels

At present, most of the health professional schools are experiencing declines in the number of applicants. Past declines cannot be attributed to demographic or educational trends, since they occurred during a period when

the number of bachelor degrees conferred and the population in the age groups historically comprising the bulk of applicants to health professions schools (ages 21-27) were still rising. However, the National Center for Education Statistics [7/] estimates that the number of Bachelor's Degrees conferred will decline by 4.5 percent by 1989, reflecting to some extent the declines projected in the population of college-age persons during that time. By the year 2000, the population of the ages 21-27 is projected to decline by about 20 percent relative to 1980 levels, resulting in the potential for further declines in the applicant pool to health professions school even if the proportion of the population of these ages seeking entry to health professions schools were to remain at current levels.

The Black population of these ages (21-27) is expected to number about 6 percent fewer in the year 2000 than currently. Therefore the potential effects of demographic changes should not be as great on the applicant pools for Blacks as for the total. Although these population changes obviously will have an impact on future trends in the number of college degrees conferred, there are no projections of the future number of earned degrees by race or ethnicity by which to validate this assumption. However, information from the U.S. Bureau of Census [8/] indicates that the number of Black persons in the first year of college remained fairly stable during the late 1970's.

7/ National Center for Education Statistics, Projections of Education Statistics to 1988-89, table 18, p. 67.

8/ U.S. Bureau of Census, Current Population Reports, Series P-20, "School Enrollment and Economic Characteristics of Students, October, 1979 and previous issues of this series.

Therefore, if attrition rates for these students remain constant, the number of Black college graduates is likely to remain fairly stable until the mid-1980s.

While reductions in the population and consequent reductions in the numbers of persons obtaining a college education may provide the potential for further reductions in the number of persons applying to health professions schools, a variety of economic, financial and social considerations will ultimately determine the future number of persons seeking enrollment in these schools.

Other Factors Affecting Future Minority First-Year Enrollments

It is generally recognized that financial barriers to obtaining a health professions education are usually greater for minority persons than for non-minority persons because the income levels for minorities are generally lower.9/ In addition, the greatest successes in increasing the enrollment of minority persons have occurred when total enrollments were increasing at a substantial pace and sources of financial aid were more readily available. The climate of the 1980's is one of expected increases in costs of education, declines in or limitations on resources available to finance an education in the health professions, possibly even bringing about cutbacks in the number of positions available in some of the

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9/ U.S. Bureau of Census, Current Population Reports, Series P-20, No. 127, "Money, Income, and Poverty Status of Families and Persons in the United States: 1980."

health professions schools. As such, it is not unlikely that these factors could exert a negative influence on efforts to increase the number of minority persons trained and subsequently practicing in the health professions.

For example, minority students are likely to be hurt more than non-minority by the proposed cutbacks in the National Health Service Corps (NHSC) Scholarship program. Blacks and Hispanics have received disproportionately high numbers of NHSC scholarships and this disproportion has lengthened during the most recent years that the scholarship program has been in effect. In 1979-80, 23.1 percent of NHSC scholarship participants were Black and 8.1 percent were Hispanic. However, in that same academic year only 5.7 percent of students enrolled in medical schools were Black and 3.9 percent were Hispanic.[10/]

Assumptions Underlying Projections of Black and Hispanic First-Year Enrollments

The assumptions regarding future Black and Hispanic first-year enrollments levels upon which the projections in this report are based are conservative ones and generally the same for the various disciplines, although there are some specific variations that will be presented in the sections for each discipline. In general, the first-year enrollment assumptions for the 3 series of projections take the following form:

10/ Association of American Medical Colleges. Final Report, Characteristics of Medical Students in the National Health Service Corps (NHSC) Scholarship Program, 1973 Through 1980. DHHS, Publication No. (HSA) 81-6034.

1. Series I (low estimate). This series assumes that financial constraints on obtaining an education in the health professions will be more evident in the enrollment patterns of minority persons than of non-minority persons. A number of predominately minority health professions schools that enroll a disproportionately high number of minority students have also historically relied heavily on Federal aid. It is assumed that a withdrawal of Federal institutional support will result in larger declines in minority students enrolled in these schools than in schools which are not as reliant on Federal aid, thereby resulting in larger overall declines in minority first-year enrollments than in total first-year enrollments. As the tables outlining assumptions in the individual sections indicate, these declines are moderate, amounting to 15 percent for medicine, 18 percent for dentistry and 28 percent for pharmacy. Hispanic enrollees in schools of pharmacy are assumed to remain a constant proportion of total third-to-last year enrollments, thereby declining 25 percent.

2. Series II (middle estimate). The present number of Black and Hispanic first-year enrollments will remain constant over the projection period.

3. Series III (high estimate). The first-year enrollment trends of Black and Hispanic persons during the 1970's are extrapolated to a comparable period in the 1980's, utilizing a least-squares regression

line fitted to data of the 1970's. The underlying assumption here is that the factors which supported these enrollment trends in the past will continue in a similar manner or that some other combination of factors will bring about the same results.

It should be emphasized that the above enrollment assumptions are illustrative, they are not predictions and are presented only to provide the basis for a range of "what if" estimates of the future supply of Black and Hispanic practitioners in the three health professions presented. It is possible that, as a result of the factors mentioned earlier, the reductions in Black and Hispanic enrollments will be considerably greater than those assumed. Series III which assumes increases in Black and Hispanic enrollments levels based on past trends may be particularly unrealistic.

Table 7. Total Female and Minority Female First Year Enrollments in Schools of Medicine, Dentistry, and Pharmacy 1975-76 and 1980-81

Medicine	1975-76 Total FYE's	1975-76 Female FYE's Number	1975-76 Female FYE's Percent of total FYE's	1980-81 Total FYE's	1980-81 Female FYE's Number	1980-81 Female FYE's Percent of total FYE's
All students	15295	3647	23.8	17186	4966	28.9
Total Minority	1746	576	3.8	2585	975	5.7
Black	1036	376	2.5	1128	513	3.0
Hispanic	295	70	0.5	353	120	0.7
American Indian	60	21	0.1	67	24	0.1
Asian	282	86	0.6	572	180	1.0
Other Minority	73	23	0.2	465[1/]	138[1/]	0.8[1/]

Dentistry	1975-76 Total FYE's	1975-76 Female FYE's Number	1975-76 Female FYE's Percent of total FYE's	1980-81 Total FYE's	1980-81 Female FYE's Number	1980-81 Female FYE's Percent of total FYE's
All Students	5697	691	12.1	5964	1170	19.6
Total Minority	637	156	2.7	772	229	3.8
Black	298	95	1.7	283	104	1.7
Hispanic	75	18	0.3	160	35	0.6
American Indian	22	2	0.0	12	1	0.0
Asian	186	35	0.6	317	89	1.5
Other minority	56	6	0.1	[2/]	[2/]	[2/]

Pharmacy	1975-76 Total FYE's	1975-76 Female FYE's Number	1975-76 Female FYE's Percent of total FYE's	1980-81 Total FYE's	1980-81 Female FYE's Number	1980-81 Female FYE's Percent of total FYE's
All Students	8494	2951	34.7	7905	3532	44.7
Total Minority	851	364	4.3	969	478	6.0
Black	413	209	2.5	387	216	2.7
Hispanic	164	42	0.5	162	62	0.8
America Indian	14	2	0.0	18	5	0.1
Asian	230	97	1.1	367	175	2.2
Other Minority	31	14	0.2	35	20	0.3

[1/] Includes Puerto Rican students attending schools in the Commonwealth of Puerto Rican and Hispanic students other than Mexican American or Mainland Puerto Rican.

[2/] Category eliminated.

Sources: Medicine--Dube, W.F. "Women Enrollment and its Minority Component in U.S. Medical Schools, Datagram. Journal of Medical Education. 51:691-693. August 1976.

1980-81 compiled from data from the American Association of Medical Colleges.

Dentistry--American Dental Association, Council on Dental Education. Minority Report; Supplement to the Annual Report on Dental Education, for 1975-76 and 1980-81.

Pharmacy--American Association of Colleges of Pharmacy. Journal of Pharmaceutical Education. "Enrollment Report on Professional Degree Programs in Pharmacy" Fall 1975 and Fall 1979.

IV. Supply Estimates and Projections

Medicine

In this section, only the supply of U.S.-trained Black physicians has been estimated and projected, largely because the predominant interest is in evaluating the situation for U.S. citizens and U.S. schools.

The active supply of U.S.-trained Black physicians (M.D.'s and D.O.'s) is currently estimated at 11,700, or about 3.3 percent of the total supply of U.S.-trained physicians. This means that there were 44.2 Black physicians per 100,000 Black persons in the population, or 1 Black physician for every 2,264 Black persons. Comparable ratios for the general population were 202 physicians per 100,000 population and 1 physician for every 680 persons (tables 1 and 8). Thus, despite the substantial increases in the numbers of Black persons entering training in the medical profession during the past decade, there remains a substantial deficit in the number of Black physicians in relation to the size of the Black population. In addition, since 1974, the number of Blacks applying to medical school has stabilized and the proportion of Blacks accepted to the first-year classes of medical schools has declined, with consequent negative affects on reaching parity in the numbers of Black physicians in relation to the representation of Blacks in the population. As tables 8-10 illustrate, by the year 2000, the supply of Black physicians is projected to range from 23,900 to 30,000 (with a mid-level of 26,100), comprising from 4 to 5 percent of the total supply of U.S.-trained physicians and resulting in physician to population ratios of 72.8 to 91.4 Black

physicians per 100,000 Black population. Although the supply of Black U.S.-trained physicians is expected to at least double by the year 2000, their numbers are expected to fall at least 35,890 practitioners short of the number necessary to achieve parity in that year (table 2).

M.D.'s. Black M.D.'s are estimated to have numbered about 11,400 in 1980, comprising 3.4 percent of the estimated supply of U.S.-trained M.D.'s active in that year. There were about 43 Black M.D.'s per 100,000 Black persons in the population or 1 Black M.D. for every 2324 Black persons in the population in 1980 (tables 1 and 8). By comparison, the U.S.-trained M.D. to population ratio for the nation as a whole in that year was 147 M.D.'s per 100,000 total population or 1 M.D. for every 680 persons in the population. As table 2 illustrates, the supply of Black M.D.'s in 1980 was more than 27,000 short of the number that would have been necessary for population parity.

Under the various assumptions presented in tables 11 and 12, regarding future first-year enrollments of Blacks, their attrition rates from medical schools, and separation from the workforce, the number of active Black M.D.'s is projected to range from 23,100 to 28,700 by the year 2000, with a mid-level of 25,100 (tables 8-10). The physician-to-population ratios would thus be 70.4 to 87.4 Black M.D.'s per 100,000 Black population, representing increases of 64 percent to 103 percent over the 1980 ratio (43.0 per 100,000).

Although the supply of Black U.S.-trained M.D.'s is projected to more than double by the year 2000, their numbers will fall far short of the levels required for population parity. The Black population is projected to number

32.8 million by the year 2000, comprising 12.6 percent of the total population. In order for Black M.D.'s to comprise 12.6 percent of the "most likely" total supply of U.S.-trained M.D.'s they would have to number 67,150, or 38,400 more than the number estimated under the most optimistic assumptions regarding future Black first-year enrollment levels. As table 2 illustrates, even combining the lowest series of total M.D. supply with the most optimistic supply series for Black M.D.'s, an additional 37,190 practitioners would still be necessary to achieve parity. Black M.D.'s are projected to comprise no more than 5.5 percent of the total supply of U.S.-trained M.D.'s in the year 2000, a considerable shortfall of the 12.6 percent necessary to result in parity.

In order to achieve population parity in the year 2000 supply of Black M.D.'s (assuming that the lowest series of total supply estimates are realized and that attrition from medical schools for Black students will remain constant at 5 percent), the average annual first-year enrollment of Black students in schools of medicine during the 1981-96 period would have to be about 3600. This would require about 2,470 more Black students in the 1981 and subsequent first-year classes than in 1980. If shared equally by all 126 medical schools, this would mean the addition of approximately 20 Black first-year enrollments per medical school. Of course, if the total supply levels realized in 2000 are greater than those in the low series and if attrition of Black students from medical schools turns out to be greater than 5 percent the number of students necessary to achieve parity would be greater (table 13).

It is also possible to look at the parity issue from another viewpoint, that of achieving a representation among first-year enrollees equal to the representation of Blacks in the general population. In 1980, Blacks comprised 11.7 percent of the total population. Black new entrants to medical schools would have to number 2,011 in order to account for 11.7 percent of the total number of new entrants to medical schools. Thus, current Black FYE's fall short of the number required for parity in first-year enrollment by nearly 900 students. As can be seen from table 14, under the most optimistic scenario presented here regarding the future numbers of Black students enrolling in the first-year classes of medical schools, the number is expected to be no more than 62 percent of the level required to result in parity in first-year enrollment even if the lowest series of total first-year enrollment projections is realized.

D.O.'s. Blacks have historically comprised a very small proportion of the total supply of Doctors of Osteopathy. In 1980, Black D.O.'s numbered an estimated 300, constituting about 2 percent of the total supply of osteopathic physicians.

The assumptions regarding the patterns of future additions to and losses from the active supply of Black D.O.'s are the same as those for Black M.D.'s. Although the number of Black D.O.'s in 2000 is estimated to range from 800 to 1,300, or 3 to 4 times the number estimated for 1980, Black practitioners are expected to comprise only 2-3 percent of the supply of active osteopathic physicians (tables 8-10).

Table 8. Estimated Supply of Active Total and Active Black Physicians (M.D. and D.O.) 1980, and Projected Active Supply 1985-2000, Series I

	1980	1985	1990	1995	2000
Total Active Physicians	449,500	523,400	589,000	644,100	693,500
M.D.'s	432,400	501,500	561,200	611,100	655,400
U.S.-Trained	333,000	386,300	438,400	482,100	522,900
Black M.D.'s	11,400	14,900	17,800	20,500	23,100
Percent of Total M.D.'s	2.6	3.0	3.2	3.4	3.5
Percent of U.S.-trained M.D.'s	3.4	3.9	4.1	4.3	4.4
Rate per 100,000 Black Population	43.0	53.2	59.7	65.3	70.3
D.O.'s	17,100	21,900	27,800	33,000	38,000
Black D.O.'s	300	400	600	700	800
Percent of Total D.O.'s	1.8	1.8	2.2	2.1	2.1
Total U.S.-Trained Physicians (M.D. and D.O.)	350,100	408,200	466,200	515,100	560,900
Total Black U.S.-Trained Physicians	11,700	15,300	18,400	21,200	23,900
Percent of Total U.S.-Trained Physicians	3.3	3.7	3.9	4.1	4.3
Rate per 100,000 Black Population	44.2	54.6	61.7	67.5	72.8

Physician totals (M.D. and D.O.) are from the Low Series of supply projections for total physicians as presented in the Third Report to the President and Congress on the Status of Health Professions Personnel in the United States.

Table 9. Estimated Supply of Active Total and Active Black Physicians (M.D. and D.O.) 1980, and Projected Active Supply 1985-2000, Series II

	1980	1985	1990	1995	2000
Total Active Physicians	449,500	523,900	591,200	650,900	704,700
M.D.'s	432,400	502,000	563,400	617,400	665,700
U.S.-Trained	333,000	386,300	440,100	488,000	532,900
Black M.D.'s	11,400	15,100	18,600	21,900	25,100
Percent of Total M.D.'s	2.6	3.0	3.3	3.5	3.8
Percent of U.S.-trained M.D.'s	3.4	3.9	4.2	4.5	4.7
Rate per 100,000 Black Population	43.0	53.9	62.4	69.7	76.4
D.O.'s	17,100	21,900	27,900	33,500	39,000
Black D.O.'s	300	400	600	800	1,000
Percent of Total D.O.'s	1.8	1.8	2.2	2.4	2.6
Total U.S.-Trained Physicians (M.D. and D.O.)	350,100	408,200	468,000	521,500	571,900
Total Black U.S.-Trained Physicians	11,700	15,500	19,200	22,700	26,100
Percent of Total U.S.-Trained Physicians	3.3	3.8	4.1	4.4	4.6
Rate per 100,000 Black Population	44.2	55.3	64.4	72.3	79.5

Physician totals (M.D. and D.O.) are based on the Basic Series of supply projections for total physicians as presented in the Third Report to the President and Congress on the Status of Health Professions Personnel in the United States.

Table 10. Estimated Supply of Active Total and Active Black Physicians (M.D. and D.O.) 1980, and Projected Active Supply 1985-2000, Series III

	1980	1985	1990	1995	2000
Total Active Physicians	449,500	529,300	609,200	684,900	754,300
M.D.'s	432,400	507,400	580,600	649,000	711,300
U.S.-Trained	333,000	387,200	444,500	499,200	550,700
Black M.D.'s	11,400	15,400	19,600	24,200	28,700
Percent of Total M.D.'s	2.6	3.0	3.4	3.7	4.0
Percent of U.S.-trained M.D.'s	3.4	4.0	4.4	4.8	5.2
Rate per 100,000 Black Population	43.0	55.0	65.8	77.0	87.4
D.O.'s	17,100	21,900	28,600	35,900	42,900
Black D.O.'s	300	400	700	1,000	1,300
Percent of Total D.O.'s	1.8	1.8	2.4	2.8	3.0
Total U.S.-Trained Physicians (M.D. and D.O.)	350,100	409,100	473,100	535,100	593,600
Total Black U.S.-Trained Physicians	11,700	15,800	20,300	25,200	30,000
Percent of Total U.S.-Trained Physicians	3.3	3.6	4.1	4.5	4.9
Rate per 100,000 Black Population	44.2	56.4	68.1	80.2	91.4

Physician totals (M.D. and D.O.) are from the High Series of supply projections for total physicians as presented in the Third Report to the President and Congress on the Status of Health Professions Personnel in the United States.

Table 11. Assumptions Relating to Black M.D. Supply Forecasts

	First-Year Enrollments (FYE's)	Attrition from Medical School	Separations from the Workforce (Deaths and Retirements)
Series I	Financial constraints on obtaining a medical education will be more evident in the enrollment patterns of Blacks than in total FYE's. Between 1981 and 1986 the number of Black FYE's will decline 15 percent.	14 percent	Death and retirement rates are the same as those for total male physicians. Average annual separation from the workforce is 1.1 percent.
Series II	Future first-year enrollment patterns for Blacks will mirror the patterns expected for total FYE's. Assumes a 5-percent decline in the number of Black FYE's between 1982 and 1987. Black FYE's will remain a constant portion (5.6 percent) of total FYE's throughout the projection period.	9.5 percent	Same as Series I.
Series III	Trends in black first-year enrollments during the period 1971-80 are extrapolated to the period 1981-90. Black FYE's will increase by 17 percent from 1981-90 or an average of about 2 percent a year and then stabilize. This series assumes a greater level of financial aid availability than the previous two series.	5 percent	Same as Series I.

Table 12. First-Year Enrollment and Graduate Numbers and Assumptions for Three Series of Black M.D. Supply Forecasts

	Series I	Series II	Series III
Black medical school graduates over the period 1981-84 based on current Black enrollment in U.S. medical schools	3,300	3,473	3,646
Additional Black graduates projected over the 1985-2000 period:			
I. If Black FYE's decline 15 percent and attrition is 14 percent	11,908	...	...
II. If Black FYE's remain at 5.6 percent of total expected FYE's and attrition is 9.5 percent	...	13,724	...
III. Extrapolation of Black FYE trends of the past decade and attrition is 5 percent	...	...	17,240
Estimated total Black M.D. graduates from 1981-2000 (Average annual grads)	15,208 (760)	17,197 (860)	20,886 (1,044)
Average annual first-year enrollment assumed during the period 1977-96	885	950	1,099
Estimated total Black M.D.'s in 2000	23,100	25,100	28,700

Table 13. Levels of Black First-Year Enrollments and Graduates Necessary to Achieve Population Parity in 2000

	Series of Total Supply Projections		
Total U.S.-Trained M.D.'s Projected[1/]	Low Series 522,900	Most Likely Series 532,900	High Series 550,700
Net Black M.D. graduates required over the period 1981-2000 to bring Black M.D. supply to population parity in 2000	57,800 (65,890 less 1980 supply depleted by deaths and retirements 1981-2000)	59,060 (67,150 less 1980 supply depleted by deaths and retirements 1981-2000)	61,300 (69,390 less 1980 supply depleted by deaths and retirements 1981-2000)
Number of Black graduates currently in the pipeline (1981-84)	(Assuming 14 percent attrition) 3,301	(Assuming 9.5 percent attrition) 3,473	(Assuming 5 percent attrition) 3,646
Number of additional Black graduates needed during the 1985-2000 period	54,499	55,587	57,654
First-year enrollments of Blacks needed over the 1981-96 period to result in necessary graduates 1984-2000	63,371 (Assuming 14 percent attrition)	61,422 (Assuming 9.5 percent attrition)	60,688 (Assuming 5 percent attrition)
Average annual first-year enrollment of Blacks during 1981-96 required to reach parity in 2000	3,961	3,839	3,793

[1/] Low, Most Likely, and High Series figures are from the Third Report to the President and Congress on the Status of Health Professions Personnel in the United States.

Table 14. Evaluation of Black M.D. First-Year Enrollment Parity
Assuming a Low Series of Total First Enrollments

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90
Estimated total FYE's (Assuming a 10 percent decline)	17,186	16,842	16,498	16,154	15,810	15,467	15,467	15,467	15,467	15,467
Percent Black of total Population	11.7	11.8	11.9	11.9	12.0	12.0	12.1	12.1	12.2	12.2
Number necessary for parity in FYE's	2,011	1,987	1,963	1,922	1,897	1,856	1,872	1,872	1,887	1,887
Projected Black M.D. FYE's assuming 15% decline	997	967	937	907	877	847	847	847	847	847
Percent of parity FYE's	49.6	48.7	47.7	47.2	46.2	45.6	45.2	45.2	44.9	44.9
Projected Black M.D. FYE's assuming 5% decline	997	978	992	982	972	962	953	942	942	942
Percent of parity FYE's	49.6	49.2	50.5	51.1	51.2	51.8	50.9	50.3	49.9	49.9
Projected Black M.D. FYE's assuming extrapolation of trends of the past decade	997	1,017	1,036	1,055	1,074	1,093	1,112	1,131	1,150	1,169
Percent of parity FYE's	49.6	51.2	52.8	54.9	56.6	58.9	59.4	60.4	60.9	62.0

Table 14. Evaluation of Black M.D. First-Year Enrollment Parity Assuming a Low Series of Total First Enrollments (Continued)

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Estimated total FYE's (Assuming a 10 percent decline)	15,467	15,467	15,467	15,467	15,467	15,467	15,467
Percent Black of total Population	12.2	12.3	12.3	12.4	12.4	12.4	12.5
Number necessary for parity in FYE's	1,887	1,902	1,902	1,918	1,918	1,918	1,933
Projected Black M.D. FYE's assuming 15% decline	847	847	847	847	847	847	847
Percent of necessary FYE's	44.9	44.5	44.5	44.2	44.2	44.2	43.8
Projected Black M.D. FYE's assuming 5% decline	942	942	942	942	942	942	942
Percent of necessary FYE's	49.9	49.5	49.5	49.1	49.1	49.1	48.7
Projected Black M.D. FYE's assuming extrapolation of trends of the past decade	1,187	1,187	1,187	1,187	1,187	1,187	1,187
Percent of necessary FYE's	62.0	62.0	62.0	61.9	61.9	61.9	61.4

Dentistry

The supply of active Black dentists in 1980 is estimated at approximately 3630, comprising about 3 percent of the total supply of 126,200 active dentists. There were 13.7 black dentists per 100,000 black persons in the population, or 1 Black dentist for every 7297 Black persons (tables 1 and 15). Comparable ratios for the general population in 1980 were 56.4 active dentists per 100,000 population or 1 dentist for every 1795 persons in the country.

As is the case for medicine, the increases in Black first-year enrollments in schools of dentistry during the 1970's were insufficient to bring the active supply of Black dentists to population parity. This will also be the case in 2000. As shown in table 15, the supply of Black dentists in the year 2000 is projected to range from 6300 to 7350 (with a mid-level of 6,860) based on the assumptions outlined in tables 16 and 17 regarding future first-year enrollment trends, attrition levels, and separations from the workforce. These numbers are double the 1980 figures resulting in practitioner-to-populations ratios of 19.2 to 22.4 Black dentists per 100,000 Black persons in the population--40 to 64 percent higher than the 1980 ratio. However, as table 15 further illustrates, even under the most optimistic scenario Black dentists are expected to comprise no more than 3.6 percent of the total supply of dentists. As a result, at best, the projected supply of Black dentists is projected to fall nearly 16,000 short of the 22,900 necessary to achieve parity.

In order to achieve parity in the supply by 2000, average first-year enrollment of Black dental students between 1981-96 would have to amount to about 1400 annually (table 18). This would require a 5-fold increase in Black dental school FYE's--which numbered 283 in 1980. If shared equally by all 60 dental schools, this increase of 1,117 additional Black students would amount to about 19 additional Black first-year students per school. If the total dental supply realized in the year 2000 is greater than the forecasts of the lowest series presented here, the number of Black first-year enrollments necessary to achieve parity would be even greater.

In order to comprise 11.7 percent of the total entering class in 1980, equalling the Black proportional representation in the population, Black first-year enrollees in dental schools would have to number 706. The actual number of Black first-year enrollees in 1980 (283) represented about 40 percent of the number necessary for first-year enrollment parity. Under the most optimistic assumptions presented here regarding future trends in the number of Black first-year enrollees in dental schools, the number is expected to reach no more than 47 percent of the level required for first-year enrollment parity (table 19).

Table 15. Estimated Supply of Active Black Dentists, 1980 and Projected Supply, 1985-2000

	1980	1985	1990	1995	2000
Total Active Dentists[1/]	126,200	140,000	152,700	166,700	181,800
Black (Series I)	3,630	4,530	5,270	5,800	6,300
Percent of Total Dentists	2.9	3.2	3.5	3.5	3.5
Rate per 100,000 Black Population	13.7	16.2	17.7	18.5	19.2
Total Active Dentists [2/]	126,200	140,600	156,600	174,500	194,600
Black (Series II)	3,630	4,550	5,400	6,160	6,860
Percent of Total Dentists	2.9	3.2	3.4	3.5	3.5
Rate per 100,000 Black Population	13.7	16.2	18.1	19.6	20.9
Total Active Dentists[3/]	126,200	141,200	160,500	182,400	207,300
Black (Series III)	3,630	4,580	5,540	6,470	7,350
Percent of Total Dentists	2.9	3.2	3.5	3.5	3.5
Rate per 100,000 Black Population	13.7	16.4	18.5	20.6	22.4

[1/] Total dentists figures are from Scenario II of projections of the national supply of active dentists as presented in the Third Report to the President and Congress on the Status of Health Professions Personnel in the United States.

[2/] Total dentists figures are an average of the projections from Scenario I and Scenario II of the national supply of active dentists as presented in the Third Report to the President and Congress on the Status of Health Professions Personnel in the United States.

[3/] Total dentists figures are from Scenario I of projections of the national supply of active dentists as presented in the Third Report to the President and Congress on the Status of Health Professions Personnel in the United States.

Table 16. Assumptions Relating to Black Dental Supply Forecasts

	First-Year Enrollments (FYE's)	Attrition from Dental School	Separations from the Workforce (Deaths and Retirements)
Series I	The number of Black first-year enrollees in Meharry and Howard schools of dentistry will decline by 25 percent between 1980 and 1990. In other schools of dentistry Black first-year enrollments will decline 7.8 percent during that period. Overall declines in the number of Black first-year enrollees amount to 18 percent.	15 percent	Death and retirement rates are the same as those for total dentists. Average annual separations from the workforce amount to about 1.7 percent. between 1980 and 1990 and then
Series II	Black first-year enrollees will remain constant at the present level of 283.	13.5 percent	Same as Series I.
Series III	Trends in black first-year enrollments during the period 1970-80 are extrapolated to the period 1981-90. Black FYE's will increase 13 percent between 1980 and 1990 and then stabilize.	12 percent	Same as Series I.

Table 17. First-Year Enrollment and Graduate Numbers and Assumptions for Three Series of Black Dental Supply Projections

	Series I	Series II	Series III
Black dental school graduates in 1981-84 based on current black enrollment in dental schools	964	980	996
Additional Black graduates projected over the 1985-2000 period			
I. If Black FYE's decline 18 percent between 1980 and 1990 and attrition is 15 percent	3,346	present proportion (4.7 percent) ...	...
II. If Black FYE's remain constant at the present level of 283 and attrition is 13.5 percent	...	3,920	...
III. Extrapolation from Black FYE trends of the past decade and attrition is 12 percent	...	...	4,398
Estimated total Black dental graduates from 1981-2000 (Average annual grads)	4,310 (216)	4,900 (245)	5,394 (270)
Average annual first-year enrollment for the period 1977-96	254	283	306
Estimated total Black dentists in 2000	6,300	6,860	7,350

Table 18. Levels of Black First-Year Enrollments and Graduates Necessary to Achieve Population Parity in 2000

Total Dentists Projected	Series of Total Supply Projections		
	Scenario I 207,300	Average of Scenarios I and II 194,600	Scenario II 181,800
Net Black dental graduates required[1/] 1981-2000 to bring Black dental supply to population parity in 2000	23,819 (26,119 less 1980 supply depleted by deaths and retirements 1981-2000)	22,220 (24,520 less 1980 supply depleted by deaths and retirements 1981-2000)	20,607 (22,907 less 1980 supply depleted by deaths and retirements 1981-2000)
Number of Black graduates currently in the pipeline (1981-84)	996 (Assuming 12 percent attrition)	980 (Assuming 13.5 percent attrition)	964 (Assuming 15 percent attrition)
Number of additional Black graduates needed during the 1985-2000 period	22,823	21,240	19,643
First-year enrollment of Blacks needed over the 1981-96 period to result in necessary graduates 1985-2000	25,935	24,555	23,109
Average annual first-year enrollment of Blacks during 1981-96 required to reach parity in 2000	1,621	1,535	1,444

[1/] Scenario I and Scenario II figures are from the Third Report to the President and Congress on the Status of Health Professions Personnel in the United States.

Table 19. Evaluation of Black Dental School First-Year Enrollment Parity Assuming a Low Series of Total First-Year Enrollments

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91
Estimated total FYE's if schools reduce to the statutory limit under construction grant commitments	6,030	5,983	5,936	5,889	5,842	5,795	5,748	5,701	5,654	5,607	5,560
Percent Black of total population	11.7	11.8	11.9	11.9	12.0	12.0	12.1	12.1	12.2	12.2	12.2
Number necessary for parity in FYE's	706	706	706	701	701	695	696	690	690	684	678
Projected Black dentistry FYE's assuming a decline of 19 percent	283	278	273	268	263	258	253	248	243	238	231
Percent of parity FYE's	40.1	39.4	38.7	38.2	37.5	37.1	36.4	35.9	35.2	34.8	34.1
Projected Black dentistry FYE's assuming extrapolation of trends since 1970	283	294	297	300	303	306	309	312	315	318	320
Percent of parity FYE's	40.1	41.6	42.1	42.8	43.2	44.0	44.4	45.2	45.7	46.5	47.2
Projected Black dentistry FYE's assuming present levels held constant	283	283	283	283	283	283	283	283	283	283	283
Percent of parity FYE's	40.1	40.1	40.1	40.4	40.4	40.7	40.7	41.0	41.0	41.4	41.7

Table 19. Evaluation of Black Dental School First-Year Enrollment Parity Assuming a Low Series of Total First-Year Enrollments (Continued)

	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Estimated total FYE's if schools reduce to the statutory limit under construction grant commitments	5,560	5,560	5,560	5,560	5,560	5,560
Percent Black of total population	12.3	12.3	12.4	12.4	12.4	12.5
Number necessary for parity in FYE's	684	684	689	689	689	695
Projected Black dentistry FYE's assuming a decline of 18 percent	231	231	231	231	231	231
Percent of necessary FYE's	33.8	33.8	33.5	33.5	33.5	33.2
Projected Black dentistry FYE's assuming extrapolation of trends since 1970	320	320	320	320	320	320
Percent of necessary FYE's	46.8	46.8	46.4	46.4	46.4	46.0
Projected Black dentistry FYE's assuming present levels held constant	283	283	283	283	283	283
Percent of necessary FYE's	41.4	41.4	41.1	41.1	41.1	40.7

Pharmacy

Of the 144,200 active pharmacists in 1980, an estimated 3,380 or 2.3 percent were Black and 1,930 or 1.3 percent were Hispanic. There were 12.8 Black pharmacists per 100,000 Black population and 13.2 Hispanic pharmacists per 100,000 persons of Spanish Origin (table 20). The comparable rate for the total population in 1980 was 63.7 pharmacists per 100,000 population. As is the case for medicine and dentistry, past increases in the numbers of Black and Hispanic persons enrollments in schools of pharmacy have not been sufficient to result in current supply levels comparable to the representation of these groups in the population.

Under the assumptions regarding pharmacy (as outlined in tables 21-24), the supply of Black and Hispanic pharmacists is expected to increase substantially by the year 2000. The supply of Black pharmacists is expected to more than double between 1980 and 2000, with estimates of the supply in that year ranging from 7,120 to 8,480 (with a mid-level of 8,290) (table 20). Similarly, Hispanic pharmacists are expected to at least double over this period, reaching an estimated 3,450 to 4,400 (with a mid-level of 3,830) by 2000.

Despite these expected gains in the numbers of Black and Hispanic pharmacists, the future supplies of these practitioners are still not expected to comprise proportions of the total supply comparable to their representation in the population. In 2000, Black pharmacists and Hispanic pharmacists are expected to comprise about 4 and 2 percent, respectively, of the total supply of pharmacists.

In 1980, the estimated supply of 3,380 Black pharmacists fell short of the number necessary for population parity by about 13,490 practitioners. Even if the most optimistic series of Black supply projections is realized by 2000 along with the lowest series of total supply projections, the supply of Black pharmacists in 2000 would fall more than 14,000 short of the 22,700 necessary for parity (table 2).

Assuming that the lowest series of total pharmacy supply will be realized in 2000 and that the attrition rate for Black pharmacy students will remain constant at 17.9 percent for males and 14.3 percent for females, the average third-to-last year enrollment of Black pharmacy students from 1981-97 would have to amount to about 1,400 annually in order to achieve parity in the 2000 supply (table 25). This would require nearly a quadrupling of the number of Black third-to-last year students in 1981 or an increase of about 1,013 students. This increase, if shared equally by all 72 schools of pharmacy, would amount to approximately 14 additional students per school. Additionally, if the total pharmacy supply realized in the year 2000 is greater than the estimates of the lowest series presented here, the number of Black third-last year enrollments necessary to achieve parity would be even greater.

Currently, the supply of Hispanic pharmacists falls short of parity by about 7,300 practitioners (table 26). Although the number of persons of Spanish Origin in the population in the year 2000 has not been projected, this group comprised 6.4 percent of the population in 1980, and, as one of the fastest

growing minority groups, can be expected to increase its representation in the population somewhat by 2000. Clearly, the 2 percent of the total supply of pharmacists which they are expected to comprise in 2000 will fall far short of parity.

The number of Black third-to-last year enrollees necessary to achieve a representation among total third-last year enrollees equal to their population representation would be more than 900 Black students, more than 500 students above the current level of enrollments.

As table 27 illustrates, under the most optimistic scenario presented here, the number of Black enrollments is expected to reach, at most, about 51 percent of the number required to result in enrollment parity.

Table 20. Estimated Active Supply of Total, Black, and Hispanic Pharmacists, 1980 and Projected Active Supply, 1985-2000

	1980	1985	1990	1995	2000
Total Pharmacists[1/]	144,200	160,500	169,400	175,500	180,200
Black (Series I)	3,380	4,620	5,600	6,380	7,120
Percent of Total Pharmacists	2.3	2.9	3.3	3.6	4.0
Rate per 100,000 Black Population	12.8	16.5	18.8	20.3	21.7
Hispanic (Series I)	1,930	2,460	2,850	3,170	3,150
Percent of Total Pharmacists	1.3	1.5	1.7	1.9	2.0
Rate per 100,000 Spanish Origin Population	13.2	N/A	N/A	N/A	N/A
Total Pharmacists[2/]	144,200	161,100	172,500	181,000	195,900
Black (Series II)	3,380	4,680	5,930	7,140	8,290
Percent of Total Pharmacists	2.3	2.9	3.4	3.9	4.2
Rate per 100,000 Black Population	12.8	16.7	19.9	22.7	25.2
Hispanic (Series II)	1,930	2,480	2,980	3,440	3,830
Percent of Total Pharmacists	1.3	1.5	1.7	1.9	2.0
Rate per 100,000 Spanish Origin Population	13.2	N/A	N/A	N/A	N/A
Total Pharmacists[3/]	144,200	162,000	176,400	187,500	197,100
Black (Series III)	3,380	4,680	5,980	7,260	8,480
Percent of Total Pharmacists	2.3	2.9	3.4	3.9	4.3
Rate per 100,000 Black Population	12.8	16.7	20.1	23.1	25.8
Hispanic (Series III)	1,930	2,510	3,170	3,800	4,360
Percent of Total Pharmacists	1.3	1.5	1.8	2.0	2.2
Rate per 100,000 Spanish Origin Population	13.2	N/A	N/A	N/A	N/A

1/ Total Pharmacists figures are from the Low Series of projections of the national supply of active pharmacists as presented in A Report to the President and Congress on the Status of Health Professions Personnel in the United States.

2/ Total Pharmacists figures are from the basic series of the projections in 1/ above.

3/ Total Pharmacists figures are from the High Series of the projections in 1/ above

N/A = Not available.

Table 21. Assumptions Relating to Black Pharmacists Supply Forecasts

	Third-Last Year Enrollments	Attrition from Pharmacy Schools	Separations from the Workforce (Deaths and Retirements)
Series I	The number of Black third-last year enrollees in the four predominately minority colleges of pharmacy decline by one-third between 1979 and 1990. In non-minority colleges, black third-last year enrollments decline 24 percent during that period. Overall declines in the number of Black third-last year enrollees amount to 28 percent.	17.9 percent males 14.3 percent females	Age-sex-specific death and retirement rates are the same as those for all male and female pharmacists. Average annual separation from the workforce is 1.7 percent for males and 1.1 percent for females.
Series II	Black third-last year enrollments will remain constant at the present number (387).	Same as Series I.	Same as Series I.
Series III	Trends in Black third-last enrollments by sex during the period 1974-1979 are extrapolated to the period 1980-85. Black third-last year enrollments increase by 4 percent from 1980-85. The number stabilizes at 1985 levels. The proportion of males and females remains constant at 1979 levels.	Same as Series I.	Same as Series I.

Table 22. Third-Last Year Enrollment and Graduate Numbers and Assumptions for Three Series of Black Pharmacist Supply Forecasts

	Series I	Series II	Series III
Black pharmacy school graduates in 1981-82 based on current black enrollment in pharmacy schools	621	621	621
Additional Black graduates projected over the 1983-2000 period[1/]			
I. If Black third-last year enrollments decline 28 percent between 1979 and 1990	4,637	...	...
II. If Black third-last year enrollments remain constant at the present number	...	5,850	...
III. Extrapolation from Black third-last year enrollment trends from 1974-1979	...	...	6,036
Estimated total Black pharmacy graduates from 1981-2000 (Average annual grads)	5,258 (263)	6,471 (325)	6,657 (333)
Average annual third-last year enrollment assumed during the period 1978-1997	312	387	396
Estimated total Black pharmacists in 2000	7,120	8,290	8,480

1/ All series assume an attrition rate from the third-last year to graduation of 17.9 percent for males and 14.3 percent for females.

Table 23. Assumptions Relating to Hispanic Pharmacists Supply Forecasts

	Third-last Year Enrollments	Attrition from Pharmacy Schools	Separations from the Workforce (Deaths and Retirements)
Series I	Hispanic third-last year enrollees will remain at the present proportion of total third-last year enrollments (2.0 percent-1.3 percent male, 0.7 percent female). The number of Hispanic third-last year enrollees declines 24.7 percent between 1979 and 1990 and then stabilize.	17.9 percent males 14.3 percent females	Age-sex-specific death and and retirement rates are the same as those for all male and female pharmacists. Average annual separation from the workforce is 1.3 percent for males and 1.1 percent for females.
Series II	Hispanic third-last year enrollments will remain constant at the present number (162).	Same as Series I.	Same as Series I.
Series III	Trends in Hispanic third-last year enrollments by sex during the period 1974-79 are extrapolated to the period 1980-85. These enrollments increase by 26 percent between 1979 and 1985 as a result of increases expected for Hispanic females. The number stabilizes at 1985 levels.	Same as Series I.	Same as Series I.

Table 24. Third-Last Year Enrollment and Graduate Numbers and Assumptions for Three Series of Hispanic Pharmacist Supply Forecasts

	Series I	Series II	Series III
Hispanic pharmacy school graduates 1981-82 based on current Hispanic enrollment in pharmacy schools	265	265	265
Additional Hispanic graduates projected over the 1983-2000 period.[1/]			
I. If Hispanic third-last year enrollments decline 24.7 percent between 1979 and 1990	1,958	...	...
II. If Hispanic third-last year enrollments remain constant at the present number	...	2,430	...
III. Extrapolation from Hispanic third-last year enrollment trends from 1974-79	...	...	2,970
Estimated total Hispanic pharmacy graduates from 1981-2000 (Average annual grads)	2,223 (111)	2,695 (135)	3,235 (162)
Average annual third-last year enrollment assumed during the period 1978-1997	133	162	194
Estimated total Hispanic pharmacists in 2000	3,450	3,830	4,360

[1/] All series assume an attrition rate from the third-last year to graduation of 17.9 percent for males and 14.3 percent for females.

Table 25. Levels of Black Third-Last Year Enrollments and Graduates Necessary to Achieve Population Parity in the Active Supply in 2000

Total Pharmacists Projected[1]	Series of Total Supply Projections		
	Low Series 180,200	Basic Series 195,900	High Series 197,100
Net Black pharmacy graduates required over 1981-2000 period to bring Black dental supply to population parity in 2000	20,648 (22,705 less 1980 supply depleted by deaths and retirements)	22,626 (24,683 less 1980 supply depleted by deaths and retirements)	22,778 (24,835 less 1980 supply depleted by deaths and retirements)
Number of Black graduates currently in the pipeline (1981-82)[2]	621	621	621
Number of additional Black graduates needed during 1983-2000	20,027	22,005	22,157
Third-last year enrollment of Blacks needed over the 1981-97 period to result in necessary graduates, 1984-2000[2]	23,757	26,103	26,284
Average annual first-year enrollment of Blacks during 1981-97 required to reach parity in 2000	1,397	1,535	1,547

[1] Low, Basic, and High Series figures are from the Third Report to the President and Congress on the Status of Health Professions Personnel in the United States.

[2] An attrition rate of 15.7 percent is assumed for all series.

Table 26. Estimated Active Supply of Total and Hispanic Pharmacists, 1980, Hispanic Pharmacists Necessary to Achieve Parity, and Projected Active Supply of Total and Hispanic Pharmacists, 2000

	1980	2000
Estimated Total Pharmacists	144,200	180,200
Estimated Hispanic Pharmacists	1,930	4,400[1/]
Percent of Total	1.3	2.4
Parity (N)	9,229	Unavailable
Percent	6.4	Unavailable
Additional Number Necessary to Achieve Parity	7,299	Unavailable

1/ From Series III Hispanic pharmacist projections see table 24.

Table 27. Evaluation of Black Third-Last Year Enrollment Parity in Schools of Pharmacy Assuming a Low Series of Total Third-Last Year Enrollments

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90
Estimated total third-last year enrollments Low Series	7,767	7,508	7,258	7,016	6,782	6,550	6,550	6,550	6,550	6,550
Percent Black of Total Population	11.7	11.8	11.9	11.9	12.0	12.0	12.1	12.1	12.2	12.2
Number necessary for parity in third-last year enrollment	909	886	864	835	814	786	793	793	799	799
Projected Black third-last year enrollment assuming a decline of 28 percent	376	365	354	343	332	321	310	299	288	280
Percent of parity third-last year enrollments	41.4	41.2	41.0	41.1	40.8	40.8	39.1	37.7	36.0	35.0
Projected Black third-last year enrollment assuming present number held constant	387	387	387	387	387	387	387	387	387	387
Percent of parity third-last year enrollments	42.6	43.7	44.8	46.3	47.5	49.3	48.8	48.8	48.4	48.4
Projected Black third-last year enrollment assuming extrapolation of past trends	387	383	387	391	394	398	402	402	402	402
Percent of parity third-last year enrollment	42.6	43.2	44.8	46.8	48.4	50.6	50.7	50.7	50.3	50.3

Table 27. Evaluation of Black Third-Last Year Enrollment Parity in Schools of Pharmacy Assuming a Low Series of Total Third-Last Year Enrollments (Continued)

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Estimated total third-last year enrollments Low Series	6,550	6,550	6,550	6,550	6,550	6,550	6,550
Percent Black of Total Population	12.2	12.3	12.3	12.4	12.4	12.4	12.5
Number necessary for parity in third-last year enrollment	799	806	806	812	812	812	819
Projected Black third-last year enrollment assuming a decline of 28 percent	280	280	280	280	280	280	280
Percent of parity third-last year enrollments	35.0	34.7	34.7	34.5	34.5	34.5	34.2
Projected Black third-last year enrollment assuming present number held constant	387	387	387	387	387	387	387
Percent of parity third-last year enrollments	48.4	48.0	48.0	47.7	47.7	47.7	47.3
Projected Black third-last year enrollment assuming extrapolation of past trends	402	402	402	402	402	402	402
Percent of parity third-last year enrollment	50.3	49.9	49.9	49.5	49.5	49.5	49.1

* U.S. GOVERNMENT PRINTING OFFICE: 1982—380-062/8574